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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/766,558	01/19/2001	Quaeed Motiwala	PA000103	1085

23696 7590 02/25/2004

Qualcomm Incorporated  
Patents Department  
5775 Morehouse Drive  
San Diego, CA 92121-1714

EXAMINER
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LIU, SHUWANG

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 02/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/766,558

**Applicant(s)**

MOTIWALA ET AL.

**Examiner**

Shuwang Liu

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12/04/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments with respect to claim 1-43 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 5, 6, 9-16, 20, 23-27, 30, 31 and 34-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Honkasalo et al. (US 5,859,843).

As shown in figure 3, Honkasalo et al. discloses a communication system, a method for processing a frame of data, comprising:

(1) regarding claim 1:

partitioning said frame of data into at least a first and second portions of data symbols (column 4, lines 38-43);

assigning a first channel element to demodulate data symbols of said first portion of data symbols (see column 4, lines 44- 54, it is inherent because the demodulation process is a inverse of the modulation); and

assigning a second channel element to demodulate data symbols of said

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second portion of data symbols (see column 4, lines 44- 54, it is inherent because the demodulation process is a inverse of the modulation).

(2) regarding claims 2, 20, and 25:

demodulating said first and second portions of data symbols by correspondingly said first and second channel elements (see column 4, lines 44- 54, it is inherent because the demodulation process is a inverse of the modulation).

(3) regarding claim 5:

partitioning said frame of data into a plurality of portions of data symbols (column 4, lines 38-43);

assigning a plurality of channel elements to demodulate data symbols of correspondingly said plurality of portions of data symbols (see column 4, lines 44- 54, it is inherent because the demodulation process is a inverse of the modulation)

(4) regarding claim 6:

demodulating said plurality of portions of data symbols by correspondingly said plurality of assigned channel elements (see column 4, lines 44- 54, it is inherent because the demodulation process is a inverse of the modulation).

(5) regarding claim 12:

partitioning each of said plurality of frames of data into a plurality of portions of data symbols (column 4, lines 38-43);

assigning a plurality of channel elements to each of said plurality of frames of data to demodulate data symbols of correspondingly said plurality of portions of data symbols of each of said plurality of frames of data (see column 4,

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lines 44- 54, it is inherent because the demodulation process is a inverse of the modulation).

(6) regarding claims 16 and 30:

means for partitioning said frame of data into a plurality of portions of data symbols (column 4, lines 38-43);

means for assigning a plurality of channel elements to demodulate data symbols of correspondingly said plurality of portions of data symbols (see column 4, lines 44- 54, it is inherent because the demodulation process is a inverse of the modulation).

(7) regarding claim 31:

means for demodulating said plurality of portions of data symbols by correspondingly said plurality of assigned channel elements (see column 4, lines 44- 54, it is inherent because the demodulation process is a inverse of the modulation).

(8) regarding claim 36:

means for partitioning each of said plurality of frames of data into a plurality of portions of data symbols (column 4, lines 38-43);

means for assigning a plurality of channel elements to each of said plurality of frames of data to demodulate data symbols of correspondingly said plurality of portions of data symbols of each of said plurality of frames of data (see column 4, lines 44- 54, it is inherent because the demodulation process is a inverse of the modulation).

(9) regarding claim 40:

means for demodulating the data symbols in each of said plurality of portions of data symbols of each of said plurality of frames of data correspondingly by said plurality of assigned channel elements (see column 4, lines 44- 54, it is inherent because the demodulation process is a inverse of the modulation).

(10) regarding claims 9-11, 13-15, 23, 24, 26, 27, 34, 35, 37-39:

wherein the number of said plurality of portions of data symbols is based on a data rate of data symbols of said frame of data as recited in claims (see figure 3).

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 4, 7, 8, 17-19, 21, 22, 28, 29, 32, 33, and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honkasalo et al. (US 6,064,662) in view of Kawable (EP0998052).

Honkasalo et al. discloses all of the subject matter as described above except for specifically teaching,

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(1) regarding claims 3, 7, 17, 18, 21, 28, 32, 41 and 42, receiving said frame of data via a radio frequency receiver front end; correlating with at least a data symbol in said frame of data in accordance with timing of at least one assigned finger; and using a result of said correlating in said first and second channel elements for said demodulating.

Kawable, in the same field of endeavor, teaches a radio frequency receiver front end (201), correlating (208) in accordance with timing of at least one assigned finger and demodulating (215, 216 and 217) as recited in claims.

It is well known that the CDMA system must have the front end, correlator and demodulator in order to recover the received information. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the basic elements, such as the front end, correlator and demodulation, as taught by Kawable et al. in the receiver of Honkasalo et al. in order to allow the receiver to demodulate spread spectrum signal with high data rate and bandwidth efficient.

(2) regarding claims 4, 8, 19, 22, 29, 33 and 43, writing to, and subsequently reading from, demodulated data symbols from said first and second channel elements, a RAM in accordance with a deinterleaving function in said communication system.

Kawable, in the same field of endeavor, teaches writing to (215), and subsequently reading from (215), demodulated data symbols from said first and second channel elements, a RAM (215 and 301) in accordance with a deinterleaving function in said communication system.

It is desirable to reduce hardware gate size by using Ram to perform deinterleaving function. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the RAM as taught by Kawable et al. in the receiver of Honkasalo et al. in order to reduce the cost and hardware gate size for demodulating spread spectrum signal with high data rate and bandwidth efficient.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shuwang Liu whose telephone number is (703) 308-9556.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin, can be reached at (703) 305-4714.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9306 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Shuwang Liu  
Primary Examiner  
Art Unit 2634

February 18, 2004